

1. A transmission power control system in a cellular communication system including a plurality of cells, a plurality of base stations respectively arranged in respective of said plurality of cells, mobile stations located within said cells,
5 and control station provided in common for said plurality of base stations and transmitting control instruction for balance adjustment of transmission power to respective of said mobile stations from said base stations,

wherein said base station comprising control means for
10 controlling initiation of a balance adjustment period for performing said balance adjustment from a frame number determined on the basis of frame number of the balance adjustment period.

15 2. A transmission power control system as set forth in claim 1, wherein assuming that a frame number of transmission frame to said mobile station is CFN and said balance adjustment period is Nperiod frame, said control means is responsive to reception of said control instruction to perform initiation control of
20 said balance adjustment period from the frame of the frame number CFN to be mod (CFN, m x Nperiod) = L (wherein, m is natural number, L is 0 or natural number smaller than m x Nperiod common to all base stations).

25 3. A transmission power control system as set forth in claim

1, wherein assuming that a frame number of transmission frame to said mobile station is CFN and said balance adjustment period is Nperiod frame, said control means is responsive to reception of said control instruction to perform initiation control of 5 said balance adjustment period from a frame where a number at the first digit as expressing said CFN by $m \times N$ period base number (wherein, m is natural number) becomes a predetermined value.

4. A transmission power control system as set forth in claim 10 1, wherein assuming that a frame number of transmission frame to said mobile station is CFN and said balance adjustment period is Nperiod frame, said control means is responsive to reception of said control instruction to perform initiation control of said balance adjustment period from a frame where said CFN becomes 15 $m \times N$ period + L (wherein m is 0 or natural number and L is 0 or natural number common to all base stations).

5. A transmission power control system as set forth in claim 4, wherein said m is natural number and said L is 0.

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6. A transmission power control system as set forth in claim 1, wherein said control means resumes said balance adjustment period from a frame defined by the same rule as a rule determining initiation of the balance adjustment period when said frame 25 number is varied from the maximum value to a minimum value or

from the minimum value to the maximum value in discontinuous manner.

7. A transmission power control system as set forth in claim
5 4, wherein assuming that a frame number of transmission frame
to said mobile station is CFN and said balance adjustment period
is Nperiod frame, said control means resumes said balance
adjustment period from a frame to be $m \times Nperiod + L$ when said
frame number is varied from the maximum value to a minimum value
10 or from the minimum value to the maximum value in discontinuous
manner.

8. A transmission power control system as set forth in claim
1, wherein said control station includes means for selecting
15 said Nperiod as a value satisfying a relationship of $k \times Nperiod$
 $= CFN_{max}$ (k is integer) assuming that a frame number of
transmission frame to said mobile station is CFN, said balance
adjustment period is Nperiod frame, minimum value of said CFN
is 1, maximum value is CFN_{max} or minimum value is 0 and maximum
20 value is $CFN_{max} - 1$, and

control means of each of said base station initiate control
of said balance adjustment period from a frame to be $m \times Nperiod$
 $+ L$ (wherein m is 0 or natural number and L is 0 or natural
number common to all base stations).

9. A transmission power control system as set forth in claim 1, wherein assuming that a frame number of transmission frame to said mobile station is CFN, said balance adjustment period is Nperiod frame, said control means selects said Nperiod as 5 a value satisfying a relationship of $k \times Nperiod = CFNmax$ (k is integer) when minimum value of said CFN is 1, maximum value is CFNmax or minimum value is 0 and maximum value is CFNmax - 1, to initiate control of said balance adjustment period from a frame to be $m \times Nperiod + L$ (wherein m is 0 or natural number 10 and L is 0 or natural number common to all base stations).

10. A transmission power control system as set forth in claim 1, wherein said control means sets an adjustment amount in said balance adjustment at a value of predetermined ratio to a difference between said transmission power upon initiation of 15 said balance adjustment period and a reference value.

11. A transmission power control method in a cellular communication system including a plurality of cells, a plurality 20 of base stations respectively arranged in respective of said plurality of cells, mobile stations located within said cells, and control station provided in common for said plurality of base stations and transmitting control instruction for balance adjustment of transmission power to respective of said mobile 25 stations from said base stations,

wherein said method comprising a control step of controlling initiation of a balance adjustment period for performing said balance adjustment from a frame number determined on the basis of frame number of the balance adjustment period, in each base station.

12. A transmission power control method as set forth in claim 11, wherein assuming that a frame number of transmission frame to said mobile station is CFN and said balance adjustment period 10 is Nperiod frame, said control step includes a step of initiating control of said balance adjustment period from the frame of the frame number CFN to be mod (CFN, $m \times Nperiod$) = L (wherein, m is natural number, L is natural number smaller than $m \times Nperiod$ common to all base stations) in response to reception 15 of said control instruction.

13. A transmission power control method as set forth in claim 11, wherein assuming that a frame number of transmission frame to said mobile station is CFN and said balance adjustment period 20 is Nperiod frame, said control step is responsive to reception of said control instruction to perform initiation control of said balance adjustment period from a frame where a number at the first digit as expressing said CFN by $m \times Nperiod$ base number (wherein, m is natural number) becomes a predetermined value.

14. A transmission power control method as set forth in claim 11, wherein assuming that a frame number of transmission frame to said mobile station is CFN and said balance adjustment period is Nperiod frame, said control step includes a step responsive 5 to reception of said control instruction to perform initiation control of said balance adjustment period from a frame where said CFN becomes $m \times Nperiod + L$ (wherein m is 0 or natural number and L is 0 or natural number common to all base stations.

10 15. A transmission power control method as set forth in claim 14, wherein said m is natural number and said L is 0.

16. A transmission power control method as set forth in claim 11, wherein said control step resumes said balance adjustment 15 period from a frame defined by the same rule as a rule determining initiation of the balance adjustment period when said frame number is varied from the maximum value to a minimum value or from the minimum value to the maximum value in discontinuous manner.

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17. A transmission power control method as set forth in claim 14, wherein assuming that a frame number of transmission frame to said mobile station is CFN and said balance adjustment period is Nperiod frame, said control step resumes said balance 25 adjustment period from a frame to be $m \times Nperiod + L$ when said

frame number is varied from the maximum value to a minimum value or from the minimum value to the maximum value in discontinuous manner.

5 18. A transmission power control method as set forth in claim 11, wherein said control station performs a step of selecting said Nperiod as a value satisfying a relationship of $k \times Nperiod = CFNmax$ (k is integer) assuming that a frame number of transmission frame to said mobile station is CFN, said balance 10 adjustment period is Nperiod frame, minimum value of said CFN is 1, maximum value is CFNmax or minimum value is 0 and maximum value is CFNmax - 1, and

control step in each of said base station initiate control of said balance adjustment period from a frame to be $m \times Nperiod + L$ (wherein m is 0 or natural number and L is 0 or natural 15 number common to all base stations).

19. A transmission power control method as set forth in claim 11, wherein assuming that a frame number of transmission frame 20 to said mobile station is CFN, said balance adjustment period is Nperiod frame, said control step selects said Nperiod as a value satisfying a relationship of $k \times Nperiod = CFNmax$ (k is integer) when minimum value of said CFN is 1, maximum value is CFNmax or minimum value is 0 and maximum value is CFNmax 25 - 1, to initiate control of said balance adjustment period from

a frame to be $m \times N_{\text{period}} + L$ (wherein m is 0 or natural number and L is 0 or natural number common to all base stations).

20. A transmission power control method as set forth in claim
5 11, wherein said control step sets an adjustment amount in said
balance adjustment at a value of predetermined ratio to a
difference between said transmission power upon initiation of
said balance adjustment period and a reference value.

10 21. A base station in a cellular communication system
including a plurality of cells, a plurality of said base stations
respectively arranged in respective of said plurality of cells,
mobile stations located within said cells, and control station
provided in common for said plurality of base stations and
15 transmitting control instruction for balance adjustment of
transmission power to respective of said mobile stations from
said base stations, said base station comprising:
control means for controlling initiation of a balance
adjustment period for performing said balance adjustment from
20 a frame number determined on the basis of frame number of the
balance adjustment period.

22. A base station as set forth in claim 21, wherein assuming
that a frame number of transmission frame to said mobile station
25 is CFN and said balance adjustment period is N_{period} frame,

1 said control means initiation control of said balance adjustment
2 period from the frame of the frame number CFN to be mod (CFN,
3 $m \times N_{\text{period}} = L$ (wherein, m is natural number, L is or natural
4 number smaller than $m \times N_{\text{period}}$ common to all base stations)

5 in response to reception of said control instruction.

23. A base station as set forth in claim 21, wherein assuming
1 that a frame number of transmission frame to said mobile station
2 is CFN and said balance adjustment period is N_{period} frame,

10 said control means is responsive to reception of said control
11 instruction to perform initiation control of said balance
12 adjustment period from a frame where a number at the first digit
13 as expressing said CFN by $m \times N_{\text{period}}$ base number (wherein,
14 m is natural number) becomes a predetermined value.

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24. A base station as set forth in claim 21, wherein assuming
1 that a frame number of transmission frame to said mobile station
2 is CFN and said balance adjustment period is N_{period} frame,
3 said control means is responsive to reception of said control

20 instruction to perform initiation control of said balance
21 adjustment period from a frame where said CFN becomes $m \times N_{\text{period}}$
22 + L (wherein m is 0 or natural number and L is 0 or natural
23 number common to all base stations.

25 25. A base station as set forth in claim 24, wherein said

m is natural number and said L is 0.

26. A base station as set forth in claim 1, wherein said control means resumes said balance adjustment period from a frame defined 5 by the same rule as a rule determining initiation of the balance adjustment period when said frame number is varied from the maximum value to a minimum value or from the minimum value to the maximum value in discontinuous manner.

10 27. A base station as set forth in claim 24, wherein assuming that a frame number of transmission frame to said mobile station is CFN and said balance adjustment period is Nperiod frame, said control means resumes said balance adjustment period from a frame to be $m \times Nperiod + L$ when said frame number is varied 15 from the maximum value to a minimum value or from the minimum value to the maximum value in discontinuous manner.

28. A base station as set forth in claim 21, wherein assuming that a frame number of transmission frame to said mobile station 20 is CFN, said balance adjustment period is Nperiod frame, said control means selects said Nperiod as a value satisfying a relationship of $k \times Nperiod = CFNmax$ (k is integer) when minimum value of said CFN is 1, maximum value is CFNmax or minimum value is 0 and maximum value is CFNmax - 1, to initiate control of 25 said balance adjustment period from a frame to be $m \times Nperiod$

+ L (wherein m is 0 or natural number and L is 0 or natural number common to all base stations).

29. A base station as set forth in claim 21, wherein said
5 control means sets an adjustment amount in said balance
adjustment at a value of predetermined ratio to a difference
between said transmission power upon initiation of said balance
adjustment period and a reference value.

10 30. A control station in a cellular communication system
including a plurality of cells, a plurality of base stations
respectively arranged in respective of said plurality of cells,
mobile stations located within said cells, and control station
provided in common for said plurality of base stations and
15 transmitting control instruction for balance adjustment of
transmission power to respective of said mobile stations from
said base stations, each of said base station initiate control
of a balance adjustment period from a frame to be $m \times N_{period}$
+ L (wherein m is 0 or natural number and L is 0 or natural
20 number common to all base stations, N_{period} is a period for
performing said balance adjustment).

25 said control station comprising means for selecting said
 N_{period} as a value satisfying a relationship of $k \times N_{period}$
= CFN_{max} (k is integer) assuming that a frame number of
transmission frame to said mobile station is CFN , said balance

adjustment period is Nperiod frame, minimum value of said CFN is 1, maximum value is CFNmax or minimum value is 0 and maximum value is CFNmax - 1.

5 31. A storage medium storing a transmission power control method in a cellular communication system including a plurality of cells, a plurality of base stations respectively arranged in respective of said plurality of cells, mobile stations located within said cells, and control station provided in common for
10 said plurality of base stations and transmitting control instruction for balance adjustment of transmission power to respective of said mobile stations from said base stations,
wherein said control program comprising a control step of controlling initiation of a balance adjustment period for
15 performing said balance adjustment from a frame number determined on the basis of frame number of the balance adjustment period, in each base station.

32. A storage medium as set forth in claim 31, wherein assuming
20 that a frame number of transmission frame to said mobile station is CFN and said balance adjustment period is Nperiod frame, said control step includes a step of initiating control of said balance adjustment period from the frame of the frame number CFN to be mod (CFN, m x Nperiod) = L (wherein, m is natural
25 number, L is natural number smaller than m x Nperiod common

to all base stations) in response to reception of said control instruction.

33. A storage medium as set forth in claim 31, wherein assuming
5 that a frame number of transmission frame to said mobile station
is CFN and said balance adjustment period is Nperiod frame,
said control step is responsive to reception of said control
instruction to perform initiation control of said balance
adjustment period from a frame where a number at the first digit
10 as expressing said CFN by $m \times N$ period base number (wherein,
 m is natural number) becomes a predetermined value.

34. A storage medium as set forth in claim 31, wherein assuming
that a frame number of transmission frame to said mobile station
15 is CFN and said balance adjustment period is Nperiod frame,
said control step includes a step responsive to reception of
said control instruction to perform initiation control of said
balance adjustment period from a frame where said CFN becomes
 $m \times N$ period + L (wherein m is 0 or natural number and L is 0
20 or natural number common to all base stations.

35. A storage medium as set forth in claim 34, wherein said
 m is natural number and said L is 0.

25 36. A storage medium as set forth in claim 31, wherein said

control step resumes said balance adjustment period from a frame defined by the same rule as a rule determining initiation of the balance adjustment period when said frame number is varied from the maximum value to a minimum value or from the minimum 5 value to the maximum value in discontinuous manner.

37. A storage medium as set forth in claim 34, wherein assuming that a frame number of transmission frame to said mobile station is CFN and said balance adjustment period is Nperiod frame, 10 said control step resumes said balance adjustment period from a frame to be $m \times Nperiod + L$ when said frame number is varied from the maximum value to a minimum value or from the minimum value to the maximum value in discontinuous manner.

15 38. A storage medium as set forth in claim 31, wherein assuming that a frame number of transmission frame to said mobile station is CFN, said balance adjustment period is Nperiod frame, said control step selects said Nperiod as a value satisfying a relationship of $k \times Nperiod = CFNmax$ (k is integer) when minimum 20 value of said CFN is 1, maximum value is CFNmax or minimum value is 0 and maximum value is CFNmax - 1, to initiate control of said balance adjustment period from a frame to be $m \times Nperiod + L$ (wherein m is 0 or natural number and L is 0 or natural number common to all base stations).

39. A storage medium as set forth in claim 31, wherein said control step sets an adjustment amount in said balance adjustment at a value of predetermined ratio to a difference between said transmission power upon initiation of said balance adjustment 5 period and a reference value.

40. A storage medium storing a transmission power control method in a cellular communication system including a plurality of cells, a plurality of base stations respectively arranged 10 in respective of said plurality of cells, mobile stations located within said cells, and control station provided in common for said plurality of base stations and transmitting control instruction for balance adjustment of transmission power to respective of said mobile stations from said base stations, 15 each of said base station initiate control of a balance adjustment period from a frame to be $m \times N_{\text{period}} + L$ (wherein m is 0 or natural number and L is 0 or natural number common to all base stations, N_{period} is a period for performing said balance adjustment).

20 said control program comprising step of selecting said N_{period} as a value satisfying a relationship of $k \times N_{\text{period}} = CFN_{\text{max}}$ (k is integer) assuming that a frame number of transmission frame to said mobile station is CFN , said balance adjustment period is N_{period} frame, minimum value of said CFN 25 is 1, maximum value is CFN_{max} or minimum value is 0 and maximum

value is CFNmax - 1.

41. A transmission power control system as set forth in claim 1, wherein assuming that a frame number of transmission frame 5 to said mobile station is CFN, said balance adjustment period is Nperiod frame, and said CFN is incremented by one in every frame to be reset to 0 when said CFN exceeds a predetermined number, said control means is responsive to reception of said control instruction to control said balance adjustment starting at a 10 frame with CFN modulo Nperiod equal to 0, and repeating for every Nperiod frame, and restarting at a frame with CFN=0.

42. A transmission power control method as set forth in claim 11, wherein assuming that a frame number of transmission frame 15 to said mobile station is CFN, said balance adjustment period is Nperiod frame, and said CFN is incremented by one in every frame to be reset to 0 when said CFN exceeds a predetermined number, said control step is responsive to reception of said control instruction to control said balance adjustment starting at a 20 frame with CFN modulo Nperiod equal to 0, and repeating for every Nperiod frame, and restarting at a frame with CFN=0.

43. A base station as set forth in claim 21, wherein assuming 25 that a frame number of transmission frame to said mobile station

is CFN, said balance adjustment period is Nperiod frame, and said CFN is incremented by one in every frame to be reset to 0 when said CFN exceeds a predetermined number, said control means is responsive to reception of said control instruction 5 to control said balance adjustment starting at a frame with CFN modulo Nperiod equal to 0, and repeating for every Nperiod frame, and restarting at frame with CFN=0.

44. A storage medium as set forth in claim 31, wherein assuming 10 that a frame number of transmission frame to said mobile station is CFN, said balance adjustment period is Nperiod frame, and said CFN is incremented by one in every frame to be reset to 0 when said CFN exceeds a predetermined number, said control step is responsive to reception of said control instruction 15 to control said balance adjustment starting at a frame with CFN modulo Nperiod equal to 0, and repeating for every Nperiod frame, and restarting at a frame with CFN=0.